

Energy Storage System

Founded in 1985, SatCon Technology Corporation, Cambridge, Massachusetts develops and markets intelligent electromechanical products for aerospace, industrial, transportation and utility applications. SatCon has worked on more than 30 projects with seven NASA centers under the Small Business Innovation Research (SBIR) program. Several of those research assignments, in particular two related to energy storage research sponsored by Lewis Research Center and Marshall Space Flight Center, yielded innovative technology that was later incorporated in SatCon's commercial Flywheel Energy Storage (FES) system.

A flywheel is a chemical-free mechanical battery that harnesses the energy of a rapidly spinning wheel and stores it as electricity with 50 times the storage capacity of a lead-acid battery. Much of SatCon's work for NASA is directed at developing FES systems for spacecraft attitude control and momentum recovery; one development combines energy storage and spacecraft control functions in a single FES system.

In commercial use, FES systems have great potential for adding long life and extended range to electric and hybrid-electric vehicles by providing extra power for acceleration or hill climbing, and by recovering energy normally lost in braking.

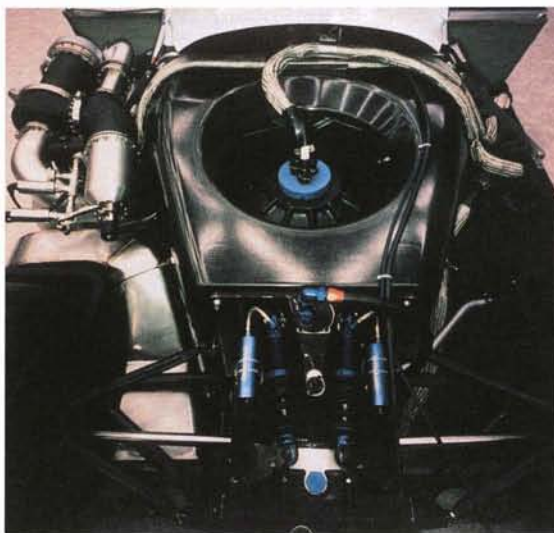
In industry and utility applications, FES systems provide continuous electrical power to critical machines and operations during lightning strikes and utility line faults. FES systems also solve quality problems caused by modern, high frequency switching power supplies. Additionally, in utility service, FES systems provide off-



Flywheel Energy Storage technology developed for NASA by SatCon Technology Corporation plays a role in the drive train of experimental hybrid-electric automobiles.

peak storage options for reducing power generation requirements to meet peak power demand.

In August 1995, SatCon signed an agreement with Westinghouse Electric Corporation, Pittsburgh, Pennsylvania for further development and commercialization of SatCon's flywheel technologies. The companies will work together to provide low voltage solutions, including energy storage, for a variety of industrial and commercial users.



The SatCon Flywheel Energy Storage system provides 50 times the energy storage capacity of a conventional lead-acid battery.